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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,066	04/21/2004	Frank Gong	1741 / SYMBP192US	5955

7590  
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EXAMINER
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AU, GARY

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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08/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/829,066	<b>Applicant(s)</b> GONG ET AL.	
	<b>Examiner</b> Gary Au	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-14 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14 and 16-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Response to Arguments***

2. Applicant's arguments, see REMARKS, filed 7/14/2008, with respect to the rejection(s) of claim(s) 1-5, 7-14 and 16-22 under US Patent No. 6,950,680 Kela et al. (Kela), US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-3, 5, 11, 12, 14, 16-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,115,616 Halperin et al. (Halperin) and further in view of US Patent No. 5,537,673 Nagashima et al. (Nagashima).

As to claim 1, Halperin teaches a key pad assembly (keyboard card 16 – figure 1, col. 2 lines 35-41) comprising: a top cover placed over a stack of keypad components (keyboard card 16 – figure 1, col. 2 lines 35-41); a bottom cover placed under the stack (keyboard card 16 – figure 1, col. 2 lines 35-41); the top cover and the bottom cover over molded around the stack to form a self contained key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41). However, Halperin fails to teach an identification component that identifies the key pad to a device that hosts the self contained key pad unit.

In an analogous art, Nagashima teaches an identification component that identifies the key pad to a device that hosts the self contained key pad unit (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Halperin's system to include an identification component that identifies the key pad to a device that hosts the self contained key pad unit, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

As to claim 11, Halperin teaches a method of fabricating a self contained key pad (keyboard card 16 – figure 1, col. 2 lines 35-41) comprising: sandwiching a plurality of

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key pad components between a top cover and a bottom cover (keyboard card 16 – figure 1, col. 2 lines 35-41); inserting molding around the key pad components for an encapsulation thereof between the top cover and the bottom cover (keyboard card 16 – figure 1, col. 2 lines 35-41). However, Halperin fails to teach an identification component that identifies the key pad to a device that hosts the self contained key pad unit.

In an analogous art, Nagashima teaches an identification component that identifies the key pad to a device that hosts the self contained key pad unit (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Halperin's system to include an identification component that identifies the key pad to a device that hosts the self contained key pad unit, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

As to claim 16, Halperin teaches a self contained key pad (keyboard card 16 – figure 1, col. 2 lines 35-41) comprising: a stack (keyboard card 16 – figure 1, col. 2 lines 35-41) comprising: inherently teaches a membrane with a placed thereupon, a printed circuit board positioned beneath the membrane (keyboard card 16 – figure 1, col. 2 lines 35-41, the keyboard assembly has to have a membrane and a printed circuit board); a top cover placed over the stack (keyboard card 16 – figure 1, col. 2 lines 35-41); a bottom cover placed under the stack (keyboard card 16 – figure 1, col. 2 lines 35-41),

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the top cover and the bottom cover define a common boundary around the stack (keyboard card 16 – figure 1, col. 2 lines 35-41), the common boundary over molded to encapsulate the stack between the bottom cover and the top cover (keyboard card 16 – figure 1, col. 2 lines 35-41). However, Halperin fails to teach an identification component that identifies the key pad to a device that hosts the self contained key pad unit.

In an analogous art, Nagashima teaches an identification component that identifies the key pad to a device that hosts the self contained key pad unit (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Halperin's system to include an identification component that identifies the key pad to a device that hosts the self contained key pad unit, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

As to claim 22, Halperin teaches a self contained key pad (keyboard card 16 – figure 1, col. 2 lines 35-41) comprising: means for encapsulating a stack of key pad components between a top and bottom cover to form a stand alone key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41); means for connecting the stand alone key pad unit to a host device (col. 2 lines 42-65). However, Halperin fails to teach means for identifying the key pad to the host device upon mounting thereon.

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In an analogous art, Nagashima means for identifying the key pad to the host device upon mounting thereon (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Halperin's system to include means for identifying the key pad to the host device upon mounting thereon, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

As to claims 2, 12 and 21, Halperin teaches the top cover and the bottom sandwich the stack (keyboard card 16 – figure 1, col. 2 lines 35-41).

As to claims 3, 17 and 18, Halperin teaches the top cover and the bottom cover are over molded to create a sealed common boundary (keyboard card 16 – figure 1, col. 2 lines 35-41).

As to claims 5 and 14, Halperin teaches the flex member provides an electrical connection between the self contained key pad unit and a device that hosts the self contained key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41).

As to claim 20, Halperin inherently teaches the bottom cover contacts the printed circuit board (keyboard card 16 – figure 1, col. 2 lines 35-41).

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5. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima) and further in view of US Patent No. 6,950,680 Kela et al. (Kela).

Considering claim 4, Halperin inherently teaches a printed circuit board and a silicone membrane with a plurality of keys (keyboard card 16 – figure 1, col. 2 lines 35-41, the keyboard assembly has to have a membrane and a printed circuit board). However, the combined system is silent about the stack comprises an electro luminous panel, placed on top of each other.

In an analogous art, Kela teaches the stack comprises an electro luminous panel (28 - figure 3, col. 4 lines 10-33), placed on top of each other (figure 4, col. 3 line 63 – col. 4 line 9).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Halperin and Nagashima to include the stack comprises an electro luminous panel, placed on top of each other, as taught by Kela, for the advantage of assembling a keyboard.



Considering claim 10, the combined system of Halperin and Nagashima teaches the system as described above. However, the combined system fails to teach an illumination color or a brightness on a surface of the keypad indicates a mode of the key pad.

In an analogous art, Kela teaches an illumination color or a brightness on a surface of the keypad indicates a mode of the key pad (col. 1 lines 19-35).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Halperin and Nagashima to include an illumination color or a brightness on a surface of the keypad indicates a mode of the key pad, as taught by Kela, for the advantage of notifying the user of the mode of the mobile phone.

6. Claims 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima) as applied to claim 1 above, and further in view of US Patent Application No. 2004/0110529 Watanabe et al. (Watanabe).

Considering claims 8 and 13, the combined system of Halperin and Nagashima teaches the system as described above. However, the combined system fails to teach the bottom cover with a recess that houses a speaker therein.

In an analogous art, Watanabe teaches the bottom cover with a recess that houses a speaker therein (figure 1B and 1C, [0049]).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Halperin and Nagashima to include the bottom cover with a recess that houses a speaker therein, as taught by Watanabe, for the advantage of assembling a key pad unit.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable US Patent No. 6,115,616 Halperin et al. (Halperin), US Patent No. 5,537,673 Nagashima et al. (Nagashima) as applied to claim 1 above, and further in view of US Patent No. 5,841,857 Zoiss et al. (Zoiss).

Considering claim 7, the combined system of Halperin and Nagashima teaches the key pad assembly of claim 1 as described above, but fails to disclose a trough.

In an analogous art, Zoiss teaches a trough (col. 4 lines 38-67, col. 5 lines 41-51 and col. 7 lines 37-47).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Halperin and Nagashima to include a trough, as taught by Zoiss, for the advantage of forming the desiccant-retaining section of the carrier (col. 4 lines 38-53).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima) as applied to claim 1 above, and further in view of US Patent No. 5,517,683 Collett et al. (Collett).

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Considering claim 9, the combined system of Halperin and Nagashima teaches the key pad assembly of claim 1, but fails to disclose the top cover and bottom cover fabricated from one of polycarbonates, thermoset plastics, and thermoformed plastic.

In an analogous art, Collett teaches the top cover and bottom cover fabricated from polycarbonates (col. 6 lines 17-32).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Halperin and Nagashima to include the top cover and bottom cover fabricated from polycarbonates, as taught by Collett, for the advantage of higher impact resistance (col. 6 lines 17-32).

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,115,616 Halperin et al. (Halperin), US Patent No. 5,537,673 Nagashima et al. (Nagashima) and US Patent No. 6,950,680 Kela et al. (Kela) as applied to claim 18 above, and further in view of US Patent no. 6,785,395 Arneson et al. (Arneson).

As to claim 19, the combined system of Halperin, Nagashima and Kela teaches the system as described above. However, the combined system fails to teach the speaker is a piezo electric speaker.

In an analogous art, Arneson teaches the speaker is a piezo electric speaker (col. 5 lines 29-46).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Halperin, Nagashima and Kela to

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include a piezo electric speaker, as taught by Arneson, for the advantage of a high free-air resonant frequency (col. 1 lines 40-52).

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary Au whose telephone number is (571) 272-2822. The examiner can normally be reached on 8am-5pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent P. Harper can be reached on (571) 272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VINCENT P. HARPER/  
Supervisory Patent Examiner, Art Unit 2617

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Examiner, Art Unit 2617